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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/634,349	08/04/2003	Chin Chung Ku	B-4508DIV 621153-6	8828

36716 7590 09/08/2005

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EXAMINER

LIEU, JULIE BICHNGOC

ART UNIT PAPER NUMBER

2636

DATE MAILED: 09/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/634,349

Applicant(s)

KU ET AL.

Examiner

Julie Lieu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Telephone interview on 8/15/05
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 17-31 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 17-31 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This office action is in response to applicant amendment filed January 11, 2005. No claims have been amended, canceled or added.
2. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

- 31
- ✓ 3. Claims 17-~~29~~ are rejected under 35 U.S.C. 103(a) as being unpatentable over Fogagnolo et al. (US Patent Application 2003/00193367) in view of Difiore (US Patent No. 5,699,049).

Claim 17:

Fogagnolo et al. discloses a method of detecting a water level in a pipe comprising:

- a. Sensing whether a capacitance within a pipe 24 is changed; and
- b. Outputting an alarm signal to enable an alarm device to output the alarm signal (page 2, para. 0022).

Fogagnolo fails to disclose that the detection of the presence of the water inside the pipe is not for the clog detection purposes. Nevertheless, detection of a clog within a pipe or conduit to avoid undesirable situation is old in the art as taught in Difiore. In light of this teaching, one skilled in the art would have readily recognized using the clog detection device in Fogagnolo for

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such purpose. The function of the Fogagnolo as to detect a clog within a pipe using a capacitive sensor would not thereby be modified.

The sensor in Fogagnolo could be moved up and down along the pipe depending on the desired detected level. Thus, it would have been obvious to one skilled in the art to move the sensor in the modified Fogagnolo to different locations along the pipe to determine the clog location because one skilled in the art would have readily recognized that the capacitive sensor would provide a signal to indicate the absence of water inside the pipe where the clog exists.

Claim 18:

Fogagnolo also discloses outputting an enable signal to enable an alarm device to output the alarm signal.

Claim 19:

The alarm signal in Fogagnolo is output to turn on a light emission diode.

Claim 20:

The step of sensing disclosed in Fogagnolo as to whether a capacitance within the pipe is changed comprising placing the capacitance proximity switch on the pipe 24 at the location where the presence of water should be detected. It would have been obvious to one skilled in the art to readily recognize to move the sensor 24 up and down until the difference in capacitance is detected to find a location where water level detection is desired, which is where the difference in capacitance is detected.

Claim 21:

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The pipe in Fogagnolo is nonmetallic and the step of moving the capacitive proximity switch into proximity of the pipe brings the capacitive proximity switch into contact with the pipe.

Claim 22:

Though sensor 24 in Fogagnolo is in contact with the pipe, it would have been obvious to one skilled in the art to place in close proximity but not in contact with the pipe as desired because same result would still be achieved when the sensor is placed in proximity instead of in contact with the pipe.

Claim 23:

Fogagnolo disclose a detector comprising:

- a. A power supply unit (fig. 4)
- b. A capacitive proximity switch 30 coupled to the power unit to sense whether a capacitance within a pipe is changed and to output an enable signal when the capacitance has changed; and
- c. An alarm device coupled to the capacitive proximity switch 30 to output an alarm signal after receiving the enable signal, wherein the location of a clog or absence of water in the pipe 24 is identified by the alarm signal. (Page 2, para. 0022).

The Fogagnolo fails to disclose that the detection of the presence of the water inside the pipe is not for the clog detection purposes. Nevertheless, detection of a clog within a pipe or conduit to avoid undesirable situation is old in the art as taught in Difiore. In light of this teaching, one skilled in the art would have readily recognized using the clog detection device in

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Fogagnolo for such purpose. The function of the Fogagnolo as to detect a clog within a pipe using a capacitive sensor would not thereby be modified.

The reference fails to clearly disclose a portable casing housing the power supply unit. However, it would have been obvious to one skilled in the art to use a casing to house the power supply unit of the device in Fogagnolo because it would be safe to house a power device in a housing to isolate it from external environment, especially when there are good chances that the power supply would be exposed to water as in Fogagnolo.

Claim 24:

The alarm signal in Fogagnolo is an LED. Nonetheless, one skilled in the art would have readily recognized using a buzzer in addition to the LED or in place of the level indicator in Fogagnolo because it is conventional in the art. Further, the use of audio or visual indicator as warning indicators would not be considered as an inventive step.

Claims 25 and 27:

The alarm signal in Fogagnolo is a light emission device.

Claim 26:

Though not disclosed in Fogagnolo, the use of a resistor as a current limiter is conventional in the art. Thus, a skilled artisan would have used a current limiting resistor to limit a current flowing through the light emission device in Fogagnolo to provide safety advantage.

Claim 28:

The power unit in Fogagnolo is a battery unit. Fig. 4.

Claim 29:

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Fogagnolo disclose a detector comprising:

- a. A battery set (fig. 4)
- b. A capacitive proximity switch 30 coupled to the power unit to sense whether a capacitance within a pipe is changed and to output an enable signal when the capacitance has changed; and
- c. A light emission diode coupled to the capacitive proximity switch 30 to output an alarm signal after receiving the enable signal, wherein the location of a clog or absence of water in the pipe 24 is identified by the alarm signal. (Page 2, para. 0022).

The Fogagnolo fails to disclose that the detection of the presence of the water inside the pipe is not for the clog detection purposes. Nevertheless, detection of a clog within a pipe or conduit to avoid undesirable situation is old in the art as taught in Difiore. In light of this teaching, one skilled in the art would have readily recognized using the clog detection device in Fogagnolo for such purpose. The function of the Fogagnolo as to detect a clog within a pipe using a capacitive sensor would not thereby be modified.

The reference fails to clearly disclose a portable casing housing the power supply unit. However, it would have been obvious to one skilled in the art to use a casing to house the power supply unit of the device in Fogagnolo because it would be safe to house a power device in a housing to isolate it from external environment, especially when there are good chances that the power supply would be exposed to water as in Fogagnolo.

Though not disclosed in Fogagnolo, the use of a resistor as a current limiter is conventional in the art. Thus, a skilled artisan would have used a current limiting resistor to

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limit a current flowing through the light emission device in Fogagnolo to provide safety advantage.

A switch coupled to the battery is not shown in the reference. Nevertheless, it would have been obvious to one skilled in the art to add a switch in the device in Fogagnolo because it is conventional to include a power ON/OFF switch in a battery powered device to control its operation.

Claim 30:

Pipe 24 in Fogagnolo is not nontransparent pipe. However, one skilled in the art would have readily recognized that the detector device in Fogagnolo still function the same regardless whether the pipe is nontransparent or not. Furthermore, lacking any criticality as to why the pipe must be nontransparent, how it would produce any unexpected result, or solve any stated problem, the pipe in Fogagnolo would be functionally equivalent to a nontransparent pipe.

Claim 31:

In Fogagnolo, the alarm signal is output to turn on a light emitting diode or a buzzer to inform of the location of the clog jammed in the nontransparent pipe.

Conclusion

4. Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Julie Lieu whose telephone number is 571-272-2978. The examiner can normally be reached on MaxiFlex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey Hofsass can be reached on 571-272-2981. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Julie Lieu', with a long horizontal flourish extending to the right.

Julie Lieu
Primary Examiner
Art Unit 2636

Aug. 29, 05